

Appl. No. 10/644,475
Amdt. Dated May 24, 2005
Reply to Office Action of February 24, 2005

REMARKS

Claims 1, 2, and 5-19 are pending in the application.

By the foregoing amendments, Applicant has amended independent claims 1, 8 and 14 for purposes of clarity. Applicant believes the claims are all in a condition for allowance, and respectfully requests that the Examiner pass the application to issuance.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 1, 2, 6, 7, 8, 9, and 11-13 stand rejected under 35 U.S.C. §102 as being anticipated by Kragtwijk, EP 763 448 A1. Applicant traverses the rejections under 35 U.S.C. §102 and submits that all of the pending claims are novel in view of Kragtwijk because the present claims and the prior art are substantially different.

Kragtwijk is directed toward an energy absorbing tubular element which is deformable by inversion, and a method for manufacturing the tubular element. In all instances in the Kragtwijk disclosure, the energy absorbing unit comprising the tubular element deformable by inversion is formed by as a unitary member comprising an end wall extending radially inwardly. The end wall is shown in Figures 1, 2, 3, and 7 of Kragtwijk as reference numerals 8, 26, 34, and 76, respectively. This end wall in the various embodiments acts as an attachment mechanism or a strike plate for transmitting axial force to the energy absorbing unit. In all instances, however, the device of Kragtwijk has a cup-shaped form because of the end wall. This configuration for the various embodiments of Kragtwijk is critical, and results from the energy absorbing unit being formed by cold forging or cold extrusion. Indeed, forging or extruding the energy absorbing unit as a unitary cup-shaped member is the solution of Kragtwijk in response to problems identified with prior art multi-piece energy absorbing units. Indeed, consistent with the disclosure of Kragtwijk, all claims require a unitary member having a radially inwardly extending wall integral therewith. Because the energy absorbing unit of Kragtwijk is forged or extruded, however, it is more properly described as a single cylindrical part having two different diameter portions 2, 4 joined through an annular

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portion 6 having an arched radial cross section providing an inversion radius. (EP '448, Col. 2, lines 40-46).

In contrast, independent claim 1 requires a reduced profile intermediate portion defining two transition areas, one at each end thereof, between the intermediate portion and the hollow cylindrical body. Further, with respect to independent claim 8, Kragtwijk fails to disclose or suggest Applicant's claimed feature wherein the reduced diameter intermediate portion lies along a length of the body and is distanced from an end of the body. That is, Kragtwijk does not disclose or suggest Applicant's claimed intermediate portion. Instead, Kragtwijk only discloses a single cylindrical part having two different diameter portions joined by an inversion radius.

Further, because every embodiment of Kragtwijk includes the enclosed end wall which is critical for enabling the energy absorbing unit to be formed by forging or extrusion from a unitary piece, Applicant traverses the suggestion in the Office Action that Kragtwijk discloses Applicant's claimed elongated hollow cylindrical body.

Thus, independent claims 1 and 8 are novel in view of Kragtwijk because Kragtwijk fails to disclose or suggest Applicant's claimed intermediate portion along a length of the elongated hollow cylindrical body. Further, claim 1 is novel and non-obvious in view of Kragtwijk because Kragtwijk fails to disclose or suggest two transition areas. For at least these same reasons, dependent claims 2, 6, 7, 9, and 11-13 are also novel and non-obvious in view of Kragtwijk. Claims 7 and 12 are further novel in view of Kragtwijk because each recites that the intermediate portion is angled with respect to the cylindrical body which Kragtwijk does not disclose or suggest. An angle of 0° is not "angled," and would be redundant of claims 6 and 11 which recite a parallel intermediate portion.

Further, with respect to independent claim 8, the spin-formed transition area further distinguishes claim 8 from the Kragtwijk reference. Kragtwijk only discloses forging or extrusion and makes it clear that such processes are critical in providing the advantages sought by the energy absorbing unit of Kragtwijk. In a similar manner, the novel claimed physical characteristics of Applicant's apparatus are enabled largely by

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the spin-forming process. The claimed intermediate portion and transition areas cannot be formed by forging or extrusion which are emphasized in Kragtwijk. Thus, the process limitation of a spin-formed transition area as recited in claim 8 further distinguishes from Kragtwijk.

The Applicant therefore submits that claims 1, 2, 6, 7, 8, 9 and 11-13 are novel over Kragtwijk because Kragtwijk fails to disclose or suggest at least several claimed features of each of the claims. Accordingly, the rejections under 35 U.S.C. §102 cannot be supported and should be withdrawn.

Claim Rejections Under 35 U.S.C. §103

Claims 14-19 stand rejected under 35 U.S.C. §103 as being unpatentable over Kragtwijk in view of Thompson, U.S. Patent No. 2,988,805. According to the Office Action, it would have been obvious to one of skill in the art to modify Kragtwijk to spin-form the reduced profile intermediate portion. Applicant traverses the rejections under 35 U.S.C. §103 and submits that a *prima facie* case of obviousness has not been established. The Kragtwijk reference, as mentioned above, discloses only forging or extruding and makes it clear that those are critical processes which enable the formation of the unitary energy absorbing unit with a closed end wall. There is no suggestion of spin-forming in Kragtwijk. Applicant also traverses the suggestion in the Office Action that the Thompson discloses spin forming as claimed. Rather, Thompson discloses a rolling method for fusing together two materials which have different melting points. Both materials are brought up to the melting temperature of the material which has the lowest melting point, and then the two parts are subjected to high pressure to fuse the two together. The Thompson reference is not concerned with spin-forming a reduced profile intermediate portion along a length of a hollow cylindrical body. Applicant therefore requests that the rejections under 35 U.S.C. §103 be withdrawn because the references relied upon fail to disclose or suggest each and every element of Applicant's claimed invention.

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Applicant further submits that one of skill in the art would not be motivated to modify the Kragtwijk reference as the Office Action proposes because the Kragtwijk reference is directed toward a different problem, namely forming a homogeneous unitary component by forging or extrusion. Such processes would permit, at most, only one transition area between portions of the body having different diameters. These processes would not permit a reduced profile intermediate portion to be formed along the length of the body distanced from an end of the body.

Further, because the closed end of the energy absorbing unit of Kragtwijk is used as a strike plate or attaching member, there is no suggestion in Kragtwijk to provide the reduced diameter portion anywhere other than at one end of the cylindrical body. In this regard, the focus must remain on what the prior art suggested to one of skill in the art at the time the invention was made, as obviousness cannot be established by combining pieces of prior art absent some "teaching, suggestion, or incentive supporting the combination." *In re Geiger*, 815 F.2d 686, 688 (Fed. Cir. 1987). There is no suggestion in Kragtwijk for providing a reduced diameter intermediate portion along a length of the body distanced from an end of the body as claimed. Nor is there any suggestion of spin-forming. In view of the strict reliance upon forging and extruding set forth in Kragtwijk, Applicant submits that the rejections under 35 U.S.C. §103 should be withdrawn because the rejection evidences improper hindsight reconstruction using the claimed invention as a template for modifying the prior art. *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984) ("It is impermissible to use the patent itself as the source of suggestion.") Applicant therefore submits that claims 14-19 are allowable because the prior art relied upon does not disclose or suggest each and every feature of Applicant's claimed invention. Further, no valid reason has been shown as to why one of ordinary skill in the art would modify the Kragtwijk reference to arrive at the claimed invention, particularly because Kragtwijk is directed toward only forging or extrusion to result in a unitary cup-shaped energy absorbing unit.

Claims 5 and 10 stand rejected under 35 U.S.C. §103 as being unpatentable over Kragtwijk. With respect to claims 5 and 10, the Applicant submits that claim 5 is non-obvious for at least the same reasons as set forth with respect to independent claim

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1, and that claim 10 is non-obvious for at least the same reasons set forth with respect to claim 8. Applicant further traverses this rejection because the two different diameter portions 2, 4 of the single cylindrical part of Kragtwijk are, in all instances, substantially the same length. That is, in each embodiment, the reduced diameter cylindrical part is intended to collapse substantially completely into the larger diameter portion. In other words, the reduced diameter portion comprises approximately 50% of the cylindrical part. Kragtwijk does not suggest Applicant's claimed feature that the intermediate portion length be between 5 and 30 percent of the length of the propeller shaft. The fact that one of skill in the art has the capabilities to arrive at this claimed range is not the test for whether one of skill in the art would have arrived at the invention based upon the teachings of the prior art. *Ex Parte Levengood*, 28 USPQ2d 1300-1301, 1302 (BPAI 1993) ("That which is within the capabilities of one skilled in the art is not synonymous with obviousness.") Accordingly, the Applicant respectfully requests that the rejection of claims 5 and 10 be withdrawn as no specific reasoning has been provided to substantiate the Office Action's reliance upon general knowledge in the prior art or assertion of design choice. *In Re Chu*, 36 USPQ2d 1089, 1094 (Fed. Cir. 1995) ("Reversing an obviousness rejection because the Patent Office provided no specific reasoning to support the assertion of design choice.")

Conclusion

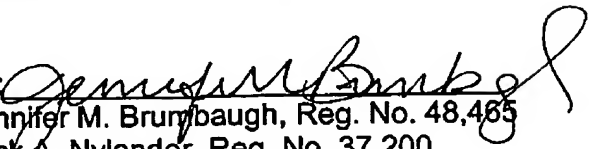
Having overcome all of the rejections set forth in the Office Action, the Applicant submits that the application is in a condition for allowance. A Notice of Allowance indicating the allowability of claims 1, 2, and 5-19 is therefore earnestly solicited. The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 377-1200 if any unresolved matters remain.

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Respectfully Submitted,

GKN Driveline North America, Inc.

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By: 
Jennifer M. Brumbaugh, Reg. No. 48,465
Mick A. Nylander, Reg. No. 37,200
GKN Driveline North America, Inc.
3300 University Drive
Auburn Hills, MI 48326-2362
(248) 377-1200